

Serial No. 10/772,792
Docket No. 200316243-1

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LISTING OF CLAIMS

1 - 11. (canceled).

12. (currently amended) A system for printing images, comprising:

a) an ink-jet ink, including:

i) an aqueous liquid vehicle having at least one volatile co-solvent, each volatile co-solvent present having a boiling point at or below about 285°C, wherein the total amount of volatile co-solvent present in the ink-jet ink is from 5 wt% to 50 wt%,

ii) acid-functionalized polymer colloid particulates dispersed in the liquid vehicle, said acid-functionalized polymer colloid particulates including surface acid groups, said surface acid groups provided by acid monomers copolymerized with other monomers to form the polymer colloid particulates, said acid monomers being present at from 1 wt% to 15 wt% of total monomers used to form the polymer colloid particulates, and

iii) polymer-encapsulated pigment colorants dispersed in the liquid vehicle;

b) a thermal ink-jet printhead configured for printing ink-jet ink;

c) a non-porous substrate configured for receiving the ink-jet ink upon printing with the ink-jet printhead; and

d) a heating element configured for heating the image once it is printed on the non-porous substrate.

13. (original) A system as in claim 12, wherein the liquid vehicle includes no more than 10 wt% of non-volatile co-solvents.

14. (original) A system as in claim 12, wherein the liquid vehicle includes no more than 2 wt% of non-volatile co-solvents.

15. (original) A system as in claim 12, wherein the liquid vehicle is devoid of any non-volatile co-solvents.

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16. (original) A system as in claim 12, wherein the liquid vehicle further includes a member selected from the group consisting of C₁ to C₈ aliphatic hydrocarbons, silicone, fluorocarbon surfactants, and combinations thereof.

17. (canceled).

18. (original) A system as in claim 12, wherein the acid-functionalized polymer colloid particulates are provided by multiple monomers copolymerized to form the polymer colloid particulates, said multiple monomers including at least one crosslinking monomer present at from 0.1 wt% to 3 wt% of total monomers used to form the polymer colloid particulates.

19 - 22. (canceled).

23. (original) A system as in claim 12, wherein the non-porous substrate is selected from the group consisting of plastic sheets, plastic films, coated papers, glass, and metal.

24. (canceled).

25. (original) A system as in claim 12, wherein the at least one volatile co-solvent is a humectant.

26. (currently amended) A method of printing an image with good rub resistance, comprising:

a) ink-jetting from a thermal ink-jet printhead an ink-jet ink onto a non-porous substrate to form the image, said ink-jet ink including:

i) an aqueous liquid vehicle having at least one volatile co-solvent, each volatile co-solvent present having a boiling point at or below about 285°C, wherein the total amount of volatile co-solvent present in the ink-jet ink is from 5 wt% to 50 wt%;

ii) acid-functionalized polymer colloid particulates dispersed in the liquid vehicle; said acid-functionalized polymer colloid particulates including surface

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acid groups, said surface acid groups provided by acid monomers copolymerized with other monomers to form the polymer colloid particulates, said acid monomers being present at from 1 wt% to 15 wt% of total monomers used to form the polymer colloid particulates, and

iii) polymer-encapsulated pigment colorants dispersed in the liquid vehicle; and

b) heating the image once it is printed on the non-porous substrate.

27. (original) A method as in claim 26, wherein the liquid vehicle includes no more than 10 wt% of non-volatile co-solvents.

28. (original) A method as in claim 26, wherein the liquid vehicle includes no more than 2 wt% of non-volatile co-solvents.

29. (original) A method as in claim 26, wherein the liquid vehicle is devoid of any non-volatile co-solvents.

30. (original) A method as in claim 26, wherein the liquid vehicle further includes a member selected from the group consisting of hydrocarbon surfactants, silicone surfactants, fluorocarbon surfactants, and combinations thereof.

31. (canceled).

32. (original) A method as in claim 26, wherein the acid-functionalized polymer colloid particulates are provided by multiple monomers copolymerized to form the polymer colloid particulates, said multiple monomers including at least one crosslinking monomer present at from 0.1 wt% to 3 wt% of total monomers used to form the polymer colloid particulates.

33 - 36. (canceled).

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37. (original) A method as in claim 26, wherein the non-porous substrate is selected from the group consisting of plastic sheets, plastic films, coated papers, glass, and metal.

38. (canceled).

39. (previously presented) A method as in claim 26, wherein the heating step is carried out at a temperature effective to drive off enough of the volatile co-solvent to improve the image permanence.

40. (original) A method as in claim 26, wherein the at least one volatile co-solvent is a humectant.

41. (new) A system as in claim 12, wherein the acid-functionalized polymer colloid particulates have a density of 0.9 g/cm^3 to 1.1 g/cm^3 .

42. (new) A system as in claim 12, wherein the acid-functionalized polymer colloid particulates have a surface dielectric constant below 2.8.

43. (new) A method as in claim 26, wherein the acid-functionalized polymer colloid particulates have a density of 0.9 g/cm^3 to 1.1 g/cm^3 .

44. (new) A method as in claim 26, wherein the acid-functionalized polymer colloid particulates have a surface dielectric constant below 2.8.